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PANCREATIC CANCER MORTALITY IN MONTANA
A RECORDS BASED CASE-CONTROL STUDY

AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
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INTRODUCTION

The Agency for Toxic Substances and Disease Registry (ATSDR) and the Montana Department of Health and Environmental Sciences (MDHES) propose a follow-up case-control study of pancreatic cancer mortality in communities in which other Montana railroad refueling facilities are located. An earlier study by the same agencies investigated a reported cluster of pancreatic cancer deaths from 1980 through 1989 in Park County, Montana[1]. Through a review of death certificates and medical records, a statistically significant increase in age-adjusted pancreatic cancer mortality from 1980 through 1989 was found in white men in Livingston, Montana. A geographic plot of the residences of the cases suggested a clustering of cases around a railroad repair and fueling station.

The protocol is divided into three major sections. The background contains a description of the railroad refueling sites, reports the results of the ATSDR/MDHES cluster investigation in Park County, MT, and reviews the literature on pancreatic cancer. The second section describes the purpose and objectives of the study. The third and final section identifies the methods to be used in the study.

BACKGROUND

Description of Sites[2]

There are 14 railroad refueling sites in Montana; 12 of the 14 sites are located in populated areas (Table 1). In general, the soil and/or ground water at these refueling sites are contaminated with diesel fuels. In addition, at some sites there are non-diesel contaminants such as trichloroethylene, lead, and naphthalene. Idling trains may also contribute to exposure by discharging smoke and fumes; unfortunately, data on the levels of airborne contaminants at these sites are not available. Documentation of levels of human exposure to diesel fuel contaminants and volatile organic compounds is also not available. The following sections provide a brief description of each of the 12 refueling sites that will be included in this study.

Livingston: The Livingston site has been under investigation by the MDHES since 1985. Numerous fuel leaks and spills occurred near two major fueling facilities at the Livingston site. Degreasers, solvents, lubricants, paint wastes, and waste oil reclamation wastes have been dumped at various locations on site and several unlined lagoons containing hazardous wastes are located on site. Environmental sampling data have revealed contamination of the groundwater beneath the site with petroleum and volatile organic compounds. This plume of contaminated groundwater has migrated off-site and has contaminated city public water supply wells and residential domestic wells. Two public water supply wells have been taken out of service and bottled water is being provided for several individuals whose wells are contaminated. Currently, data for air and surface water contamination are unavailable.

Missoula: The Missoula facility contains a fueling area, turntable, roundhouse, and car shop. Soil and groundwater at this site are contaminated with diesel fuel and trichloroethylene.

Glendive: There is a major railroad refueling station in Glendive. The operation includes a diesel locomotive shop, turntable, fueling tracks, and diesel fuel storage tanks. Preliminary results indicate significant, widespread contamination of the soil and groundwater with diesel fuels. The source of water for Glendive is the Yellowstone River, which is located less than 1,000 feet from the site.

Laurel: The Laurel site contains a locomotive maintenance operation in addition to being a refueling station. Soil and groundwater contamination with diesel fuels, trichloroethylene, and lead have been detected.

Havre: The Havre refueling facility is located along the Milk River. The facility contains a locomotive repair shop, fueling areas and underground storage tanks. The soil and groundwater at this sites are contaminated with diesel fuels.

Whitefish: The Whitefish facility is located along the Whitefish River near Whitefish Lake. In 1972, oil was discovered seeping out of the river banks below the rail yard into the Whitefish River. A fuel recovery trench was installed in 1973 to intercept the oil, but use of the recovery trench has ceased. The soil, groundwater, and surface water at this site are contaminated with diesel fuels and trichloroethylene.

Great Falls: This facility is located near 10th Avenue South in Great Falls along the banks of the Missouri River. Environmental investigations have focused on two fueling areas and a large above ground diesel storage tank. Diesel fuels have been detected in soil, groundwater, and surface water at the site.

Helena: Two 25,000-gallon above ground fuel tanks, a car repair shop, machine shop, and turntable are located at this facility. The Helena facility has had a history of diesel fuel spills, with diesel oils entering the storm drains and contaminating discharge areas downstream from the facility. There is contamination of soil, groundwater, and surface water with diesel fuels at this site.

Billings: The Billings facility is no longer operating as a fueling station; instead the site has been converted into a trailer loading and unloading center. After removal of several underground storage tanks in June, 1987, evidence of leakage from the tanks was detected. The soil and groundwater at this site are contaminated with diesel fuels and trichloroethylene.

Butte: The facility in Butte consisted of a 10,000-gallon underground fuel storage tank and attached distribution lines. The storage tank and distribution lines have since been removed. Petroleum contaminants and naphthalene have been detected in the soil and groundwater at this site.

Shelby: The Shelby facility was a mainline fueling station until the early 1980's. It is now only used for emergency and local fueling. An unused underground storage tank, distribution lines, and an engine house remain on the site. On several occasions in the past, diesel fuel has entered the city sewer system. The soil at the site is contaminated with diesel fuels; the extent, is any, of groundwater contamination is unknown.

Glasgow: The facility at Glasgow is located along the Milk River Valley. It was utilized for limited fueling. Diesel fuels have been detected in soil, groundwater and surface water.

Pancreatic Cancer Cluster Investigation, Park County, Montana

The ATSDR and MDHES cancer cluster investigation involved review of death certificates and medical records[1]. The observed pancreatic cancer mortality among white males in Livingston from 1980 through 1989 was higher than expected when compared to the age-adjusted number of deaths expected on the basis of U.S. age and sex specific pancreatic mortality rates. The O:E ratio for white men in Livingston (14 cases) was 2.3 when age-adjusted for the U.S. population and 2.5 when age-adjusted for the Montana population. Analysis of death certificates and available medical records did not find a significant increase in pancreatic cancer mortality in Park County exclusive of Livingston. Based on the limited information obtained in this investigation, tobacco smoking was not associated with this increase.

Livingston is the largest community in Park County, Montana and for many years has been the site of a railroad repair and fueling station (as noted previously). An apparent clustering of cases among people who worked in the railroad industry may have reflected occupational patterns in the community as a whole or indicated the presence of a possible risk factor. Addresses of the cases did appear to cluster along the railroad right-of-way; however, without a detailed demographic analysis and due to the small number of cases in this investigation it was not possible to establish an association between geographical proximity to the railroad facility and pancreatic cancer.

Pancreatic Cancer

Pancreatic cancer is a devastating malignancy that is almost universally fatal. It is estimated that there will be 25,000 pancreatic cancer deaths in the United States during 1993 making pancreatic cancer the fourth leading cause of cancer mortality in both men and women[3]. Median survival after diagnosis is 4 to 8 months. The only effective treatment for pancreatic cancer is complete surgical excision of the tumor; unfortunately this is only possible in 10 to 15 percent of patients with pancreatic cancer[4]. The five-year survival rate for whites in the United States has not significantly changed in the past two decades and for 1983-1988 was 3 percent. The five-year survival rate for blacks has risen from 2 percent in 1974-1976 to 5 percent in 1983-1988[3].

Pancreatic cancer is more common in men than women, in blacks than whites, and in urban than rural residents[4,5]. Pancreatic cancer is uncommon prior to age 50[4]. Cigarette smoking has been consistently found to be associated with pancreatic cancer and is the only definite risk factor identified at this time[5,6,7,8]. Diabetes mellitus has also been found to be associated with pancreatic cancer, although not as consistently as cigarette smoking[6,9]. Diets high in cholesterol have been positively associated with pancreatic cancer while diets with large amounts of fruits and vegetables are negatively associated with pancreatic cancer[8,10,11]. Alcohol abuse and coffee consumption are not considered to be risk factors for pancreatic cancer[6,8,9,12].

Toxic effects of chemical agents have been suspected of inducing cancer of the pancreas and of being partially responsible for the increased incidence of pancreatic cancer in the United States[13,14]. Occupational epidemiological studies have found increased risks of pancreatic cancer among oil refinery workers[15,16,17], tannery workers[18], employees exposed to cutting fluids and abrasives in metal machining and grinding[19], and chemical manufacturing employees exposed to DDT[20]. However, specific chemical agents have not been definitively identified as pancreatic carcinogens. In addition, community environmental exposure to toxic substances has not been thoroughly investigated in the etiology of pancreatic cancer.

PURPOSE AND OBJECTIVES

Purpose

The purpose of this study is to determine if residence near railroad refueling facilities in Montana is associated with pancreatic cancer mortality from 1980 through 1989. Specifically, this will be a population-based case-control study of pancreatic cancer mortality. The hypothesis to be tested by this study, stated as the alternative, is that cases of pancreatic cancer death were more likely to have lived proximally to railroad refueling facilities compared to similar controls dying of other causes.

Objectives

The hypothesis will be tested while accomplishing the following objectives:

1) All cases of pancreatic cancer death from 1980 through 1990 in counties of Montana containing railroad refueling facilities will be identified through a review of death certificates and the Montana Central Tumor Registry.

2) Two control subjects for each case matched on age, gender, race, date of death within one year, and county of residence will be identified through a review of death certificates.

3) The odds of living proximally to a railroad refueling facility will be calculated for the cases and controls and an odds ratio will be estimated. Adjustments will be made for other factors that may be associated with pancreatic cancer, such as occupation or having diabetes mellitus. The estimated odds ratio will be the measure of association used to test the hypothesis.

METHODS

Rationale for the Study Design

The ATSDR and MDHES cluster investigation found that the observed pancreatic cancer mortality among white males in Livingston from 1980 through 1989 was higher than expected and did not find a significant increase in pancreatic cancer mortality in Park County exclusive of Livingston. Although the study could not determine the cause of this apparent increase in pancreatic cancer mortality, one possible explanation was that environmental exposure to toxicants related to the railroad refueling facility was responsible for the increase. Therefore, a population-based case-control study of pancreatic cancer mortality using available records is proposed to investigate whether residential proximity to a railroad refueling facility increases the risk of pancreatic cancer.

Pancreatic cancer is suitable for a mortality study using death certificates because of the low survival rate and because patients with this catastrophic neoplasm are likely to seek and obtain for medical care. Good correlation between pancreatic cancer mortality and pancreatic cancer incidence has previously been demonstrated for white men and women[21]. The case-control approach is an efficient design because pancreatic cancer is uncommon enough that a prospective study would require a large sample size and several years to complete.

The proposed study design is limited in scope and should be considered an important next step in investigating the possible contributions of environmental toxicants to the etiology of pancreatic cancer. If indicated the results of this study may focus and direct additional follow-up activities, including expanding the scope of this case-control study through interviews with surviving relatives or review of medical records. The limitations of the proposed study are discussed later in this proposal.

Case Definition

A case will be defined as any decedent in the 11 counties with railroad refueling facilities identified as having pancreatic cancer from 1980 through 1990. Cases will be ascertained through a review of the Montana Central Tumor Registry and review of death certificates.(Appendices A & B) The following stepwise approach will be taken to identify cases:

1) Persons listed as having pancreatic cancer in the Montana Central Tumor Registry from 1980 through 1990 will be identified.

2) A death certificate will be obtained for those individuals identified as having pancreatic cancer who died between January 1, 1980 and December 31, 1990.

3) An identified decedent will be classified as a case if the county of residence listed on the death certificate is one of the eleven counties with railroad refueling facilities.

4) Additional cases, not included in the Montana Central Tumor

Registry, will be identified if the death certificate lists International Classification of Diseases (ICD-9) code 157 (pancreatic cancer) as the cause of death and the county of residence listed on the death certificate is one of the eleven counties with railroad refueling facilities.

Selection of Controls

Controls will be selected from decedents listing one of the 11 counties with railroad refueling facilities as the county of residence. Two controls will be matched to each case. Controls will be matched to each case on the following criteria: 1) gender; 2) race as specified on the death certificate; 3) age plus or minus three years; 4) date of death plus or minus one year; and 5) county of residence.

Exposure Definition

Exposure will be defined as proximity to the railroad refueling facility. Concentric circles around the refueling facilities will be used to define exposure. A case or control will be classified as "exposed" if the residence listed on the death certificate is located within 0.5 mile, 1 mile, 1.5 mile, 2 mile, and 3 mile radius of the railroad refueling facility. A geographic plot of residences in the Livingston investigation suggested a clustering of cases around the railroad yard and is the basis for this case-control study. The residences of these cases which suggested the cluster were all within three miles of the railroad yard. The environmental data necessary to accurately define and quantify exposure at these sites is not available.

Sample Size Calculation

The sample size required to detect a relative risk of 1.5 assuming a 1:2 case:control ratio, a power (1 - beta) of 0.90, and an alpha of 0.05 (two-sided test) were estimated using the formula described by Schlesselman[22].

$$n = (1 + 1/c)p'q'(z_{alpha} + z_{beta})^2/(p_1 - p_0)^2$$

n = the number of cases

c = the number of controls per case

cn = the number of controls

$p' = (p_1 + cp_0)/(1 + c)$

$q' = 1 - p'$

$p_1 = p_0R/[1 + p_0(R - 1)]$

p_0 = proportion of controls exposed

R = relative risk of interest

If the proportion of controls exposed is assumed to be 0.45[a], the relative risk of interest is 1.5 and there are 2 controls for each case, then the number of cases required is equal to:

$$n = (1 + 1/2)(0.47)(0.53)[(1.96 + 1.28)^2/(0.55 - 0.45)^2]$$

$$n = 392$$

---

[a] The proportion of controls exposed is estimated based upon the proportion of the population of Park County, MT that lives in Livingston, MT. The actual proportion of the population of eligible control subjects that were "exposed" is unknown.

Therefore, a sample size of 392 cases and 784 controls is required. The Montana Central Tumor Registry reported 301 cases of pancreatic cancer from 1983 to 1988 in the 11 counties containing railroad refueling facilities. Assuming that this 5 year period was representative of the decade, there were approximately 600 cases of pancreatic cancer in the 11 counties of interest. Given the high case fatality rate of pancreatic cancer, there should be sufficient numbers of cases to conduct a study with adequate power to detect a relative risk of 1.5.

Field Operations

The purpose of the field operations will be to identify cases and controls and to obtain a death certificate for each identified case and control. Using the computerized data files of the MDHES Bureau of Records and Statistics (Appendices C & D), ATSDR field staff in conjunction with MDHES staff will identify cases and controls using the established selection criteria. Death certificates will be obtained for each case and each control and based upon the residence listed on the death certificate, exposure status will be determined by plotting the XY coordinates of the residence on scaled area maps and calculating the distance of the residence from the center of the railroad refueling facility.

Data Analysis

Data Entry and Management: Each case and control will be given an identification number with the first 3 digits of the ID number being identical for a given case and its matched controls. A computerized data base will be created that contains the following information: 1) ID number; 2) exposure status, expressed as a gradient of 0.5, 1, 1.5, 2, 3, or greater than 3 miles; 3) residential address, including street address, city, and county; 4) birthdate; 5) occupation; 6) industry; 7) race; 8) gender; 9) education; 10) immediate cause of death; 11) underlying causes of death; 12) cause of death; and 13) other-significant conditions contributing to death. Statistical analyses will be conducted using release 6.0 of the Statistical Analysis System (SAS).

Data Analysis: The Mantel-Haenszel procedure for matched analysis with four controls per case will be used to obtain a point estimate of the odds ratio and a test of significance. The test-based method for estimating confidence limits on the odds ratio will be used to estimate the 95% confidence interval. Adjustment procedures including stratification and multiple logistic regression will be used to adjust for the effects of other risk factors and control for potential confounders.

If there are sufficient numbers of histologically confirmed cases then the subset of confirmed cases will be analyzed separately. Approximately 35% of the pancreatic cancer cases identified in the Livingston study were histologically confirmed. If the same percentage of cases are histologically confirmed in this study and only those cases which are histologically confirmed are analyzed, the study will have a 65% chance of detecting a 1.5 times increase in the risk of pancreatic cancer.

Interpretation of the Results and Limitations of the Study

The proposed study design is limited in scope and is an exploratory phase in investigating the possible contributions of environmental toxicants at Montana railroad refueling facilities to the etiology of pancreatic cancer in residents living near those sites. There are several potential sources of error given the proposed study design and a narrow interpretation of the results is necessary.

The single most important potential source of error in the proposed study is the misclassification of exposure. Assignment of exposure based on geographic location of an individual's residence is often used in environmental epidemiology; nevertheless, this is a crude method which often classifies persons with little or no exposure in the same category with persons having extensive exposure to the contaminants of concern. Similarly, persons classified as unexposed may have considerable exposure to the contaminants of concern from other sources because of occupational, hobby, or recreational activities. This bias would most likely be in the direction of supporting the null hypothesis.

In addition to not having individual measures of exposure to the contaminants of concern, environmental measures are also lacking. If sufficient environmental data were available then individual exposures could be estimated from the environmental data. However, important data on levels of contaminants in the air, off-site water, and off-site soil are unavailable. This is also a limitation of this study and can result in persons who are unexposed being classified as exposed because the assumption is made that the off site environmental exposure and contaminants are consistent among the sites and within the exposure areas. Assigning a gradient of risk by concentric rings surrounding the sites may suggest an association with the "exposure". In addition, since railroad workers may have a high exposure, examining the relationship of occupation and industry to pancreatic cancer mortality may also be helpful in investigating whether an association with "exposure" exists.

The potential for misclassification of exposure in the proposed study is further complicated because exposure is assigned based on the residence at the time of death. Obviously, "exposed" persons could have spent the majority of their lives outside of the exposure area and "unexposed" persons could have spent a significant portion of their lives in the exposure area. Interviews with surviving relatives or use of locating techniques could lessen this potential for misclassification; however, the restricted scope of and available resources for the proposed study do not allow for those techniques at this time.

Misclassification of disease status is also of some concern,

although this is much less likely to be a source of error than misclassification of exposure. Pancreatic cancer is a devastating malignancy and patients with this cancer generally have severe abdominal pain, weight loss, and may be jaundiced. Therefore, individuals with pancreatic cancer are likely to seek and obtain medical care. Given the usually rapid course of this malignancy, palliative care without a thorough diagnostic workup may be selected based upon a clinical diagnosis. This may be especially true for very old, frail patients. Consequently, some individuals may be classified as having pancreatic cancer when the true classification is another malignant condition or a severe non-malignant condition. The use of the Montana Central Tumor Registry to identify patients with histological confirmation of pancreatic cancer may prevent this type of misclassification. Although not planned at this time, medical records review and strict criteria for classification of disease status would also prevent this type of misclassification.

Similarly, an individual classified as not having pancreatic cancer could have an undiagnosed early malignancy. However, given the rarity of pancreatic cancer it is improbable that an individual classified as not having pancreatic cancer actually did have the disease. Unfortunately, this type of misclassification, however small, cannot be controlled for in the design or analysis of a case-control study.

Data for this study will only be gathered from available information found on the Montana death certificate. Therefore, information concerning potential confounders or other risk factors will be missing. For instance, the study as designed will not allow for direct control of cigarette smoking which may be a significant confounder. The inability to control for confounding factors in the design or analysis of the study is also a serious limitation.

Summary Justification

Despite the limitations mentioned above, this study will help in the follow-up and investigation of an interesting, possible clustering of pancreatic cancer near railroad refueling facilities in Montana. Based on the findings, this study may be used to focus future activities. Additional data, such as medical records and interviews with surviving relatives, could supplement the data collected for the study and reduce the error resulting from misclassification and confounding. These follow-up procedures will be considered by the sponsoring agencies, when the proposed study suggests the need for additional investigation.

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TABLE 1: COMMUNITIES WITH RAILROAD REFUELING FACILITIES¶

COMMUNITY	POPULATION	COUNTY	COUNTY POPULATION
Livingston	6,701	Park	59,047
Missoula	42,918	Missoula	78,687
Glendive	4,802	Dawson	59,330
Laurel	5,686	Yellowstone	113,419
Havre	10,201	Hill	59,501
Whitefish	4,368	Flathead	59,218
Great Falls	55,097	Cascade	77,691
Helena	24,569	Lewis & Clark	47,495
Billings	81,151	Yellowstone	113,419
Butte	33,336	Siver Bow	36,941
Shelby	2,763	Toole	5,046
Glasgow	3,572	Valley	9,505

¶ Population data is from the 1990 census.

APPENDIX A

TUMOR REGISTRY ABSTRACT FORM

DRAFT

TUMOR REGISTRY ABSTRACT FORM

Revised 4/89 AS-21

entral Office Information	Reporting Hospital	Abstracted By	Date	Coded By	Date	Check

lospital No. 1

RS ☐ FU-Hosp ☐ ☐

Abstract No Seq Date 1st Admitted Chart No Class of Case

lame of Patient (Last) (First) (Middle) (Maiden)

Name of Spouse

Address Street City County State Zip Code

elephone No.	Race	Ethnic	Sex	Marital Status	Age at DX	Date of Birth (Mo Day Yr.)	Place of Birth

riend or Relative (other than spouse) | Relationship | Address end/or Telephone No.

ate of Initial Diagnosis

Place of Diagnosis (If diagnosed elsewhere, please indicate place and DX)

This Hospital _____ Other Hospital _____ Physician's Office _____ Unknown _____

rimary Site Paired Organ | Sequence | Other Primary Tumors

iagnostic Confirmation Histology _____ Cytology _____ Clinical _____ X-ray _____ Autopsy _____ Unk _____

istology (Specify Dates. Place. Histologic Type and Slide No.)

ummary Staging In situ _____ Localized _____ Regional _____ Distant _____ Unstaged No Info _____

Substantiate _____

ize of Tumor _____

(Regional Nodes)

No. of Positive Nodes _____

te(s) of Distant Metastases:

No. of Nodes Examined _____

Other Staging Info

JC Staging Basis of Staging

Clinical/Diagnostic _____ Surgical/Evaluative _____ Clinical/Pathological _____ Retreatment _____

_____ N _____ M _____ AJC Stage 1 _____ 2 _____ 3 _____ 4 _____ Recurrent/ Unstageable _____

umulative summary of all tumor directed therapy for this tumor include surgery (type of operation; type of radiation therapy and details of chemical hormonal or other kinds of treatment). List therepy and dates, if no therapy is given record reason.

Comments

Date of Last Follow-up or Death _____

Type of Recurrence _____

Distant Site(s) of First Recurrence _____

of First Recurrence _____

Place of Death _____

ause of Death _____

Status

Alive _____ No Evidence _____ Recurrence _____
(in remission)

Deed _____ Evidence _____ Unknown _____

QUALITY OF SURVIVAL

Normal _____ Symp & Amb _____ Amb > 50%

Amb < 50% _____ Bedridden _____ Unk _____

Autopsy Yes _____ No _____ Unknown _____

hysician responsible for follow-up	2nd Physician	3rd Physician

Social Security No.

Zip Code at DX Residence at DX

Race Sex MS Religion Age at DX

Month Day Yr of Birth Place of Birth

Date of Initial DX Primary Site Paired Organ

DC Histology Grade Stage

Other Stage

Tumor Size # Pos Nodes # Nodes Exam Site of Dist. Met

AJC Staging Basis T N M AJC Stage

Special Studies

Treatment

Type	Code	A	F	Month	Day	Year

Radiation Sequence ☐ Residual Tumor ☐

Date of Last Follow-up or Death Patient Status Tumor Status

Type of Recurrence Date of 1st Recurrence

Recurrence Site(s) Cause of Death Autopsy

LF FU Method Physicians

APPENDIX B

MONTANA CERTIFICATE OF DEATH

FORM V.S. 3 (1988 revision)

MONTANA
CERTIFICATE OF DEATH

SAMPLE

Local File Number

State File Number

DECEDENT

DECEDENT'S NAME *(First)* 1.	*(Middle)*	*(Last)*	SEX 2	DATE OF DEATH *(Month, Day, Year)* 3.

RACE—American Indian, Black White, etc. *(Specify)* 4.	AGE—Last Birthday *(Years)* 5a.	UNDER 1 YEAR Months 5b.	UNDER 1 YEAR Days	UNDER 1 DAY Hours 5c.	UNDER 1 DAY Minutes	DATE OF BIRTH *(Month, Day, Year)* 6	COUNTY OF DEATH 7a

7b. PLACE OF DEATH *(Check only one)*

HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA

OTHER: ☐ Nursing Home ☐ Residence ☐ Other *(Specify)*

FACILITY NAME *(If not institution, give street and number)* 7c.	CITY, TOWN, OR LOCATION OF DEATH 7d.

BIRTHPLACE *(City and State or Foreign Country)* 8.	MARITAL STATUS 9 ☐ Never Married ☐ Widowed ☐ Married ☐ Divorced	SURVIVING SPOUSE *(If wife, give maiden surname)* 10.

SOCIAL SECURITY NUMBER 11	DECEDENT'S USUAL OCCUPATION *(Give kind of work done during most of working life. Do not use retired.)* 12a.	KIND OF BUSINESS/INDUSTRY 12b	WAS DECEDENT EVER IN U S ARMED FORCES? *(Yes or no)* 13.

RESIDENCE—STATE 14a	COUNTY 14b.	CITY, TOWN, OR LOCATION 14c	STREET NUMBER 14d.

INSIDE CITY LIMITS? *(Yes or no)* 14e	ZIP CODE 14f	ANCESTRY—Mexican, Puerta Rican, Cuban, African, English, Irish German, Hmong, etc. *(Specify)* 15.	16. DECEDENT'S EDUCATION *(Specify only highest grade completed)* Elementary/Secondary (0-12)	College (1-4 or 5 +)

PARENTS

FATHER'S NAME *(First, Middle, Last)* 17.	MOTHER'S NAME *(First, Middle, Maiden Surname)* 18.

INFORMANT

INFORMANT'S NAME *(Type/Print)* 19a.	MAILING ADDRESS *(Street and Number or Rural Route Number, City or Town, State, Zip Code)* 19b

DISPOSITION

METHOD OF DISPOSITION ☐ Burial ☐ Cremation ☐ Removal from State 20a ☐ Other *(Specify)*	PLACE OF DISPOSITION *(Name of cemetery, crematory, or other place)* 20b.	LOCATION—City or Town, State 20c.

SIGNATURE OF FUNERAL SERVICE LICENSEE OR OTHER PERSON IN CHARGE OF DISPOSITION 21a.	MONTANA LICENSE NUMBER *(of Licensee)* 21b	NAME AND ADDRESS OF FACILITY 22

CAUSE OF DEATH

Physician
ICD-9
cause of death

23. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line. *(See Instructions on other side)*

Approximate Interval Between Onset and Death

IMMEDIATE CAUSE (Final disease or condition resulting in death) a. __________

DUE TO (OR AS A CONSEQUENCE OF):

Sequentially list conditions if any, leading to immediate cause. Enter Underlying Cause (Disease or injury that initiated events resulting in death) Last.

b. __________

DUE TO (OR AS A CONSEQUENCE OF):

c. __________

DUE TO (OR AS A CONSEQUENCE OF):

d.

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.	WAS AN AUTOPSY PERFORMED? *(Yes or no)* 24a. WAS CASE REFERRED TO CORONER? *(Yes or no)* 25	24b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? *(Yes or no)*

26 MANNER OF DEATH ☐ Natural ☐ Pending Investigation ☐ Accident ☐ Could not be Determined ☐ Suicide ☐ Homicide	DATE OF INJURY *(Month, Day, Year)* 27a.	TIME OF INJURY 27b M	INJURY AT WORK? *(Yes or no)* 27c.	DESCRIBE HOW INJURY OCCURRED 27d.
	PLACE OF INJURY—At home, farm, street, factory, office building, etc. *(Specify)* 27e.			LOCATION (Street and Number or Rural Route Number, City or Town, State) 27f.

CERTIFIER

28a. TO BE COMPLETED BY CERTIFYING PHYSICIAN ONLY. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated. *(Signature and Title)*	29a. TO BE COMPLETED BY CORONER ONLY. On the basis of examination and/or investigation in my opinion death occurred at the time, date and place and due to the cause(s) and manner as stated. *(Signature and Title)*

DATE SIGNED *(Month, Day, Year)* 28b.	HOUR OF DEATH 28c M	DATE SIGNED *(Month, Day, Year)* 29b.	HOUR OF DEATH 29c. M
NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER *(Type or Print)* 28d.		DATE PRONOUNCED DEAD *(Month, Day, Year)* 29d.	PRONOUNCED DEAD *(Hour)* 29e. M

NAME AND ADDRESS OF CERTIFIER (PHYSICIAN OR CORONER) *(Type or Print)*

30.

REGISTRAR

LOCAL REGISTRAR'S SIGNATURE 31a.	DATE FILED *(Month, Day, Year)* 31b.

SAMPLE

STATE COPY

APPENDIX C

MASTER RECORD DESCRIPTION
ROCKY MOUNTAIN CANCER DATA SYSTEM

DRAFT

MASTER RECORD DESCRIPTION

ROCKY MOUNTAIN CANCER DATA SYSTEM

October 1985 Revision

Columns	Title and Codes
1 - 6 ON STAT FILE	**Central Registry Number** All numeric Should not contain any spaces
7 ON STAT FILE	**Sequence Number for This Tumor** All numeric Should not be left blank 0 = One primary only 1 = First of two or more primaries 2 = Second of two or more primaries 3,4,5,6 etc. 7 = One primary, 5th hospital 8 = Benign or non-reportable 9 = 2nd Benign or non-reportable
8 ON STAT FILE	**Check Digit Number** All numeric Number assigned by computer (Accession book) [illegible] MONTANA
9 - 38 NOT ON STATISTICAL FILE 30	**Patient Name** All alpha characters Should not be left blank Entered last name first, followed by a comma, first and middle names or initials, and any special designations
39 - 41 NOT ON STATISTICAL FILE 2	**Hospital 1 - Identification Number** All numeric Should not contain any spaces if any other Hospital 1 information number is filled

42 - 47 NOT ON STATISTICAL FILE.	Hospital 1 - Accession Number All numeric Should not contain any spaces if any other Hospital 1 information number is filled Begins with year of diagnosis see ACoS instructions 888888 or 999999 may be used if it necessary to assign a dummy hospital accession number
48 NOT ON STATISTICAL FILE	Hospital 1 - Check Digit Number Should not be left blank if any other Hospital 1 information number is filled 0 - 9 = Number assigned by registrar from the accession book
49 - 55 NOT ON STATISTICAL FILE	Hospital 1 - Chart Number All numeric Should not contain any spaces if any other Hospital 1 information number is filled 8888888 = Chart number is social security number 9999999 = Unknown
56 NOT ON STAT FILE	Hospital 1 - Class of Case All numeric Should not be left blank if any other Hospital 1 information number is filled 0 = Dx only at this hospital 1 = Dx and/or rx at this hospital 2 = Dx elsewhere, rx at this hospital 3 = Dx and rx elsewhere 4 = Dx prior to this reference date 5 = Dx at autopsy 9 = Unknown
57 - 58 NOT ON STAT	Hospital 1 - Month First Admitted All numeric Should not contain any spaces if any other Hospital 1 information number is filled 01 - 12 = January - December 99 = Unknown

59 - 60 NOT ON STAT FILE	**Hospital 1 - Year First Admitted** All numeric Should not contain any spaces if any other Hospital 1 information number is filled 99 = Unknown
61 - 63 NOT ON STAT FILE	**Hospital 2 - Identification Number** All numeric Should not contain any spaces if any other Hospital 2 information number is filled
64 - 69 NOT ON STAT FILE 6	**Hospital 2 - Accession Number** All numeric Should not contain any spaces if any other Hospital 2 information number is filled Begins with year of diagnosis see ACoS instructions 888888 or 999999 may be used if it is necessary to assign a dummy hospital accession number
70 NOT ON STAT FILE 1	**Hospital 2 - Check Digit Number** Should not be left blank if any other Hospital 2 information number is filled 0 - 9 = Number assigned by registrar from the accession book
71 - 77 NOT ON STAT FILE 7	**Hospital 2 - Chart Number** All numeric Should not contain any spaces if any other Hospital 2 information number is filled 8888888 = Chart number is social security number 9999999 = Unknown

78 NOT ON STAT FILE	**Hospital 2 - Class of Case** All numeric Should not be left blank if any other Hospital 2 information number is filled 0 = Dx only at this hospital 1 = Dx and/or rx at this hospital 2 = Dx elsewhere, rx at this hospital 3 = Dx and rx elsewhere 4 = Dx prior to this reference date 5 = Dx at autopsy 9 = Unknown
79 - 80 NOT ON STAT FILE	**Hospital 2 - Month First Admitted** All numeric Should not contain any spaces if any other Hospital 2 information number is filled 01 - 12 = January - December 99 = Unknown
81 - 82 NOT ON STAT FILE	**Hospital 2 - Year First Admitted** All numeric Should not contain any spaces if any other Hospital 2 information number is filled 99 = Unknown
83 - 85 NOT ON STAT FILE	**Hospital 3 - Identification Number** All numeric Should not contain any spaces if any other Hospital 3 information number is filled
86 - 91 NOT ON STAT FILE	**Hospital 3 - Accession Number** All numeric Should not contain any spaces if any other Hospital 3 information number is filled Begins with year of diagnosis see ACoS instructions 888888 or 999999 may be used if it is necessary to assign a dummy hospital accession number

92 NOT ON STAT FILE	**Hospital 3 - Check Digit Number** Should not be left blank if any other Hospital 3 information number is filled 0 - 9 = Number assigned by registrar from the accession book
93 - 99 NOT ON STAT FILE	**Hospital 3 - Chart Number** All numeric Should not contain any spaces if any other Hospital 3 information number is filled 8888888 = Chart number is social security number 9999999 = Unknown
100 NOT ON STAT FILE	**Hospital 3 - Class of Case** All numeric Should not be left blank if any other Hospital 3 information number is filled 0 = Dx only at this hospital 1 = Dx and/or rx at this hospital 2 = Dx elsewhere, rx at this hospital 3 = Dx and rx elsewhere 4 = Dx prior to this reference date 5 = Dx at autopsy 9 = Unknown
101 - 102 NOT ON STAT FILE 2	**Hospital 3 - Month First Admitted** All numeric Should not contain any spaces if any other Hospital 3 information number is filled 01 - 12 = January - December 99 = Unknown
103 - 104 NOT ON STAT FILE 2	**Hospital 3 - Year First Admitted** All numeric Should not contain any spaces if any other Hospital 3 information number is filled 99 = Unknown

105 - 107 NOT ON STAT FILE 3	**Hospital 4 - Identification Number** All numeric Should not contain any spaces if any other Hospital 4 information number is filled
108 - 113 NOT ON STAT FILE 6	**Hospital 4 - Accession Number** All numeric Should not contain any spaces if any other Hospital 4 information number is filled Begins with year of diagnosis see ACoS instructions 888888 or 999999 may be used if it is necessary to assign a dummy hospital accession number
114 NOT ON STAT FILE	**Hospital 4 - Check Digit Number** Should not be left blank if any other Hospital 4 information number is filled 0 - 9 = Number assigned by registrar from the accession book
115 - 121 NOT ON STAT FILE 7	**Hospital 4 - Chart Number** All numeric Should not contain any spaces if any other Hospital 4 information number is filled 8888888 = Chart number is social security number 9999999 = Unknown

122 NOT ON STAT FILE	Hospital 4 - Class of Case All numeric Should not be left blank if any other Hospital 4 information number is filled 0 = Dx only at this hospital 1 = Dx and/or rx at this hospital 2 = Dx elsewhere, rx at this hospital 3 = Dx and rx elsewhere 4 = Dx prior to this reference date 5 = Dx at autopsy 9 = Unknown
123 - 124 NOT ON STAT FILE	Hospital 4 - Month First Admitted All numeric Should not contain any spaces if any other Hospital 4 information number is filled 01 - 12 = January - December 99 = Unknown
125 - 126 NOT ON STAT FILE	Hospital 4 - Year First Admitted All numeric Should not contain any spaces if any other Hospital 4 information number is filled 99 = Unknown
127 ON STAT FILE	Reporting Source All numeric Should not be left blank Should be 1 if a hospital position is filled 1 = Hospital inpatient 2 = Clinic (hospital or private) - Radiation center 3 = Laboratory (hospital or private) 4 = Private practitioner 5 = Nursing/convalescent home 6 = Autopsy only (diagnosed at autopsy) 7 = Death certificate only 8 = Partial Record (Special Case)

128 ON STAT FILE	**Follow-up Hospital** All numeric Should not be left blank Should have a valid number in relation to the hospital positions that are filled 1 - 4 = Hospital 1 - 4 7 = Out of state 8 = In state 9 = Unknown
129 ? 7	**State Analytic** All numeric May be left blank Should be coded as a 2 if the sequence is coded as a 7 indicating a 5th hospital 1 = Analytic 2 = Non-analytic 9 = Unknown
130 - 134 ON STAT FILE L = 5	**Zip Code at Diagnosis** All numeric Should not contain any spaces Should be zip code at diagnosis not current zip code 99999 = Unknown
135 - 143 NOT ON STAT FILE L = 9	**Social Security Number** All numeric May be left blank Should not contain any spaces if filled 999999999 = Unknown

144 - 146 ON STAT FILE L 3	Residence at Diagnosis Should not be left blank Should contain county code if resident of the state Two-letter abbreviations should be right justified leaving 1st column blank Numeric codes indicate county code AL - WY = Alabama - Wyoming PR = Puerto Rico MX = Mexico CD = Canada 999 = Resident of state, county unknown XXX = Non-resident of state, unk residence
147 ON STAT FILE L=1	Race Ethnicity All numeric Should not be left blank 0 = Caucasian 1 = Caucasian of Spanish surname 2 = Black 3 = American Indian 4 = Chinese 5 = Japanese 6 = Filipino 7 = Hawaiian 8 = Other 9 = Unknown
148 ON STAT FILE L 1	Sex All numeric Should not be left blank 1 = Male 2 = Female 3 = Other (Hermaphrodite) 4 = Transsexual 9 = Unknown

149 ON STAT FILE	Marital Status at Diagnosis All numeric Should not be left blank 1 = Single (never married) 2 = Married (living as married) 3 = Seperated 4 = Divorced 5 = Widowed 6 = Common Law or code 2 9 = Unknown
150 ON STAT FILE	Religion at Diagnosis All numeric May be left blank 0 = Catholic 1 = Protestant 2 = LDS 3 = Jewish 4 = Greek Orthodox 5 = Non-christian (other than Jewish) 6 = Other 7 = None 9 = Unknown
151 - 152 ON STAT FILE	Age at Diagnosis Measured in complete years of life Assigned by computer if diagnosis date and birth date are both known Should not be left blank if either diagnosis date or birth date is unknown 00 = Less than 1 year old 01 - 98 = 1 year through 98 years old 99 = 99 years old or older XX = Unknown age (can only be used if either diagnosis date or birth date is unknown
153 - 154 ON STAT FILE	Month of Birth All numeric Should not contain any spaces 01 - 12 = January - December 99 = Unknown

155 - 156 ON STAT FILE L = 2	Day of Birth All numeric Should not contain any spaces 01 - 31 = Days of month 99 = Unknown
157 - 158 ON STAT FILE L = 2	Year of Birth All numeric Should not contain any spaces 99 = Unknown
159 - 164 NOT ON STAT FILE ?? L = 6	Census Tract All numeric May be left blank Decimal point between 4th and 5th digit is ommitted See 1970 Census Block Statistic Maps for all cases diagnosed prior to and during 1977 for specific census tract codes See 1980 Census Block Statistic Maps for all cases diagnosed from 1978 to the present for specific census tract codes 999999 = Unknown
165 - 167 ON STAT FILE L = 3	Place of Birth May be left blank Two-letter abbreviations should be right justified leaving 1st column blank AL - WY = Alabama - Wyoming See SEER Program Geocoding for Place of Birth Manual (April 1977) for codes outside the United States 999 or UKN = Unknown
168 - 169 ON STAT FILE	Month of Initial Diagnosis All numeric Should not contain any spaces 01 - 12 = January - December 99 = Unknown

170 - 171 ON STAT FILE	Year of Initial Diagnosis All numeric Should not contain any spaces 99 = Unknown
172 - 174 ON STAT FILE	Primary Site All numeric Should not contain any spaces See ICDO Manual (1976) for codes (ignore the 1 & .) 999 = Unknown
175 ON STAT FILE	Laterality All numeric Should not be left blank See SEER Program Code Manual (August 1985 Revision) for sites requiring paired organ coding 0 = Not a paired organ, not applicable 1 = Right organ involvement only 2 = Left organ involvement only 3 = Only one organ involved, right or left unspecified 4 = Bilateral involvement 9 = Pair organ but no information concerning lateral involvement
176 ON STAT FILE	Diagnostic Confirmation All numeric Should not be left blank 0 = Autopsy 1 = Positive histology 2 = Positive exfoliative cytology in absence of positive histology (includes positive PAP smears) 4 = Positive microscopic confirmation, method unspecified 6 = Direct visualization without microscopic confirmation (includes gross autopsy findings) 7 = Radiography without microscopic confirmation 8 = Clinical diagnosis only 9 = Unspecified whether or not microscpically confirmed

177 - 180 ON STAT FILE	Histologic Type All numeric Should not contain any spaces See IDCO Manual (1976) for codes
181 ON STAT FILE	Behavior Code All numeric Should not be left blank 3 = Malignant, primary site 9 = Malignant, unknown
182 ON STAT FILE	Histologic Grading and Differentiation 1 = Grade I, well differentiated, differentiated 2 = Grade II, moderately differentiated, moderately well differentiated 3 = Grade III, poorly differentiated 4 = Grade IV, undifferentiated anaplastic 5 = T-cell 6 = B-cell 7 = Null cell 9 = Not determined, stated, or applicable
183 - 184 ON STAT FILE	Summary Stage Should not contain any spaces This field must be coded Summary Code 0- = Carcinoma In-situ 4- = Localized 5- = Regional, direct extension only 6- = Regional, nodes only 7- = Regional, direct extension & nodes 8- = Regional, NOS $ &- = Distant -- = Unstaged, unknown

185 - 186 ON STAT FILE	**Size of Tumor in Centimeters** May be left blank M in 1st column = Size in millimeters 99 = Unknown
187 - 188 ON STAT FILE	**Regional Nodes Positive** NUMBER OF NODES All numeric May be left blank 99 = Unknown
189 - 190 ON STAT FILE	**Regional Nodes Examined** NUMBER OF NODES All numeric May be left blank 99 = Unknown
191 - 193 ON STAT FILE 1 - 3	**Sites of Distant Metastasis** All numeric Should not be left blank if the stage is distant Each column is a seperate numeric code 0 = Bone marrow 1 = Peritoneal 2 = Lung 3 = Pleural 4 = Hepatic 5 = Osseous 6 = Central Nervous System 7 = Skin 8 = Lymph Nodes (distant) 9 = Other, not specified, Unknown $ = Generalized (Carcinomatosis) or > 3 sites
194 ON STAT FILE	**AJC Staging Basis** All alpha May be left blank C = Clinical S = Surgical P = Clinical - Pathological R = Recurrent or unstageable

195 - 196 ON STAT FILE	T May be left blank See AJC Staging Manual (2nd Edition) for coding instructions
197 - 198 ON STAT FILE	N May be left blank See AJC Staging Manual (2nd Edition) for coding instructions
ON STAT FILE 199 END OF 1ST FILE ([illegible])	M May be left blank See AJC Staging Manual (2nd Edition) for coding instrucions
1 2 200 - 201 START 2ND FILE ON STAT FILE	AJC Stage May be left blank First character: 0 = Stage 0 1 = Stage I 2 = Stage II 3 = Stage III 4 = Stage IV 9 = Recurrent, unstageable, or unknown
3 - 16 202 - 215 LEN=14 ON STAT FILE	Special Studies AVAILABLE FOR SPECIAL CODING MUST BE NUMERIC Be sure to document any special coding done in the special studies area

17 - 29 216 - 228	**Extent of Disease**
ON STAT FILE BLANKS -	May be used for additional special studies OR FOR SEER CODING (here defined)
	See SEER Program Manual Extent of Disease -- Codes and Coding Instructions (April 1977 and subsequent revisions) for sites requiring coding, specific codes, and relevant ranges
	Expanded Site-Specific Scheme (beginning 1975)
(216 - 217)	Tumor Size
(218)	"-" except for lymphomas
(219 - 222)	Direct extension of primary tumor
(223)	Site specific information
(224 - 225)	Regional lymph node involvement
(226 - 227)	Distant lymph node involvement
(228)	Distant site involvement
	Four-Digit Scheme (beginning 1983)
(216 - 217)	Tumor Size
(218)	Extension
(219)	Lymph Nodes
(220 - 228)	Blank
30 - 33 229 - 232	**Diagnostic Information (Procedures)**
(229 - 231)	May be left Blank
(232)	May be used for special studies or SEER coding
ON STAT FILE BLANKS [illegible]	See SEER Program Code Manual (August 1985 Revision) for sites requiring coding, specific codes, and relevant ranges
34 233	**Number of Treatment Fields Used**
	All numeric
ON STAT FILE	Should not be coded
	Determined by the computer
	0 - 9 = Number of treatment fields used

35 234	Treatment Field # 1 - Type of Treatment All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
235	Treatment Field # 1 - Treatment Code All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding manual for codes
236 - 237	Treatment Field # 1 - Month Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
238 - 239	Treatment Field # 1 - Year Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown

240 [illegible]	**Treatment Field # 1 - Treatment Attribute** All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
42 241 [illegible]	**Treatment Field # 2 - Type of Treatment** All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
43 242 [illegible]	**Treatment Field # 2 - Treatment Code** All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes
44 - 45 243 - 244 [illegible]	**Treatment Field # 2 - Month Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown

46 47 245 - 246	**Treatment Field # 2 - Year Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown
48 247	**Treatment Field # 2 - Treatment Attribute** All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
49 248	**Treatment Field # 3 - Type of Treatment** All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
50 249	**Treatment Field # 3 - Treatment Code** All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes

250 - 251	Treatment Field # 3 - Month Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
252 - 253	Treatment Field # 3 - Year Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown
254	Treatment Field # 3 - Treatment Attribute All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
255	Treatment Field #.4 - Type of Treatment All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other

256	Treatment Field # 4 - Treatment Code All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes
257 - 258	Treatment Field # 4 - Month Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
259 - 260	Treatment Field # 4 - Year Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown
261	Treatment Field # 4 - Treatment Attribute All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used

262	Treatment Field # 5 - Type of Treatment All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
61 263	Treatment Field # 5 - Treatment Code All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes
264 - 265	Treatment Field # 5 - Month Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
67 - 62 266 - 267	Treatment Field # 5 - Year Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown

268	**Treatment Field # 5 - Treatment Attribute** All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
269	**Treatment Field # 6 - Type of Treatment** All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
270	**Treatment Field # 6 - Treatment Code** All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes
271 - 272	**Treatment Field # 6 - Month Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown

273 - 274	Treatment Field # 6 - Year Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown
275	Treatment Field # 6 - Treatment Attribute All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
276	Treatment Field # 7 - Type of Treatment All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
277	Treatment Field # 7 - Treatment Code All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes

278 - 279	Treatment Field # 7 - Month Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
280 - 281	Treatment Field # 7 - Year Treatment Began All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown
282	Treatment Field # 7 - Treatment Attribute All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
283	Treatment Field # 8 - Type of Treatment All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other

25 284	**Treatment Field # 8 - Treatment Code** All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes
285 - 286	**Treatment Field # 8 - Month Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
287 - 288	**Treatment Field # 8 - Year Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown
70 289	**Treatment Field # 8 - Treatment Attribute** All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used

71 290	**Treatment Field # 9 - Type of Treatment** All alpha Should not be left blank if the rest of the treatment field is filled S = Surgery R = Radiation C = Chemotherapy H = Hormonal therapy I = Immunotherapy O = Other
72 291	**Treatment Field # 9 - Treatment Code** All numeric Should not be left blank if the rest of the treatment field is filled See American College of Surgeons Coding Manual for codes
73 - 74 292 - 293	**Treatment Field # 9 - Month Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 01 - 12 = January - December 99 = Unknown
[illegible] 294 - 295	**Treatment Field # 9 - Year Treatment Began** All numeric Should not contain any spaces if the rest of the treatment field is filled 99 = Unknown

296	Treatment Field # 9 - Treatment Attribute All numeric May be left blank This field may be used as desired some of the current uses are to: indicate which of the hospitals associated with case performed this treatment It has also been used to indicate additional site specific treatment and more detail about the given treatment. Be sure to document how this field is being used
297	Radiation Sequence (with surgery) All numeric May be left blank 0 = No radiation 1 = Radiation, no surgery 2 = Radiation before surgery 3 = Radiation after surgery 4 = Radiation before and after surgery 9 = Radiation given, sequence unknown
298	Residual Tumor All numeric May be left blank 0 = No residual tumor 1 = Microscopic residual tumor 2 = Macroscopic residual tumor 8 = No resection done 9 = Unknown, unspecified
299 - 300	Month of Last Follow-Up or Death All numeric Should not contain any spaces 01 - 12 = January - December 99 = Unknown
301 - 302	Year of Last Follow-Up or Death All numeric Should not contain any spaces Should not contain an unknown code (ie 99)

303	**Status of Patient** All numeric Should not be left blank 1 = Alive 2 = Dead 3 = Dead, date of death unconfirmed 4 = Special lost designation
304	**Status of Tumor** All numeric Should not be left blank 1 = No evidence of tumor at last contact 2 = Evidence of tumor at last contact 3 = No evidence at death, but another tumor present 4 = Evidence at death, but whether it was this tumor or another cannot be established 9 = Unknown
305 - 307	**Survival Time in Months** All numeric Should not contain any spaces Determined by computer
308 - 309	**Month of First Recurrence** All numeric Should not contain any spaces if other recurrence information is filled 01 - 12 = January - December 99 = Unknown
310 - 311	**Year of First Recurrence** All numeric Should not contain any spaces if other recurrence information is filled 99 = Unknown

312	Type of First Recurrence Should not be left blank if other recurrence information is filled 4 = Local recurrence 8 = Regional recurrence $ = Distant recurrence X = Never disease free 9 = Unknown
313 - 315	Distant Sites of First Recurrence All numeric Should not be left blank if type of first recurrence is distant Each column is a seperate numeric code 0 = Bone marrow 1 = Peritoneal 2 = Lung 3 = Plueral 4 = Hepatic 5 = Osseous 6 = Central Nervous System 7 = Skin 8 = Lymph nodes 9 = Other, not specified, or unknown $ = Generalized
316 - 319	Cause of Death All numeric Should not be left blank if patient status indicates dead Contains the ICD code for the primary or underlying cause of death as found on the official death certificate 7969 = Death certificate available, cause of death unknown 9999 = Death certificate not available or not coded

320	**Autopsy** All numeric Should not be left blank if patient status indicates dead 1 = Autopsy performed 2 = Autopsy not performed 9 = Unknown if autopsy was performed
321	**Letter Frequency** All numeric Should not be left blank Automatically defaults to 3 if not entered 1 = Quarterly 2 = Semi-annually 3 = Annually 8 = Lost, send letter to registrar 9 = Stop letter follow-up, no further letter action
322 - 326	**Physician # 1 - Following Physician** All numeric Should be a number less than 65000 See Physician Listing for specific codes
327 - 331	**Physician # 2** All numeric Should be a number less than 65000 See Physician Listing for specific codes
332 - 336	**Physician # 3** All numeric Should be a number less than 65000 See Physician Listing for specific codes
337 - 341	**Physician # 4** All numeric Should be a number less than 65000 See Physician Listing for specific codes

342 - 346	**Physician # 5** All numeric Should be a number less than 65000 See Physician Listing for specific codes
347 - 351 (347) (348)	**Flags** Codes for Flag 1 are: 1 = Override age related errors 2 = Override status related errors 3 = Override site related errors (also stage Histology) 4 = Override site - Histology error 5 = Override any inconsistency Codes for Flag 2 are: 1 = Override all errors 2 = force record to appear on error list
352 - 355	**Date Put on File - Month and Year (MMYY)** All numeric Should not contain any spaces Assigned by the computer All cases added to computer prior to 09/74 were assigned a date of 09/74
356 - 359	**Date of Last Update - Month and Year (MMYY)** All numeric Should not contain any spaces Assigned by the computer
360	**Number of Updates** All numeric Assigned by the computer If greater than 9, left as 9

APPENDIX D

MONTANA CERTIFICATE OF DEATH MAGNETIC RECORD FORMAT

DRAFT

DEATH - 1993
MAGNETIC RECORD FORMAT

ITEM	FIELD	LENGTH	START	END	NAME	DATA RANGE
0a	1	2	1	2	*State of Occurrence	00-57,59
0b	2	6	3	8	*State File Number	000001-
1	3	15	9	23	*Decedent's First Name	Alphabetic
	4	15	24	38	*Middle Name	Alphabetic
	5	20	39	58	*Last Name & Suffix	Alphabetic
2	6	1	59	59	*Sex	1-2,9,Δ
3	7	2	60	61	*Month of Death	mm:01-12,99,ΔΔ
	8	2	62	63	*Day of Death	dd:01-31,99,ΔΔ
	9	2	64	65	*Year of Death	yy:93
4	10	1	66	66	*Race	0-9,Δ
5a,b,c	11	1	67	67	Age - Flag	F:I,N,Δ
	12	1	68	68	*Age - Unit	U:0-6,9,Δ
	13	3	69	71	*Age	A:00-99
6	14	2	72	73	*Month of Birth	mm:01-12,99,ΔΔ
	15	2	74	75	*Day of Birth	dd:01-31,99,ΔΔ
	16	2	76	77	*Year of Birth	yy:00-99,ΔΔ
7a	17	2	78	79	*County of Death	01-57
7b	18	1	80	80	*Place of Death	1-6
7c	19	3	81	83	Facility Name	011-930,ΔΔΔ
7d	-	-	-	-	City, Town, or Location	--
8	20	2	84	85	*Birthplace - State	01-57,59,99,ΔΔ
9	21	1	86	86	*Marital Status	1-4,9,Δ
10	-	-	-	-	Surviving Spouse	--
11	22	9	87	95	*Social Security Number	000000001-9999999 ΔΔΔΔΔΔΔΔΔ
12a	-	-	-	-	Occupation	--
12b	-	-	-	-	Kind of Business	--
13	-	-	-	-	Armed Forces?	--
14a	23	2	96	97	*Residence-State	01-57,59,99
14b	24	2	98	99	*Residence-County	01-99,ΔΔ
	25	1	100	100	*Residence-City	1-9,Δ
14c	-	-	-	-	City,Town,Location✓	--
14d	-	-	-	-	Street Number ✓	--
14e	26	1	101	101	Inside City Limits	1-2,Δ
14f	27	5	102	106	Zip Code	Numeric
15	28	2	107	108	*Ancestry	00-05,99,ΔΔ
16	29	2	109	110	*Education	00-17,99,ΔΔ
17	30	15	111	125	Father's 1st Name	Alphabetic
	31	20	126	145	*Father's Last Name	Alphabetic
18	32	15	146	160	Mother's 1st Name	Alphabetic
	33	20	161	180	Mother's Maiden Name	Alphabetic
19a	-	-	-	-	Informant's Name	--
19b	-	-	-	-	Mailing Address	--
20a	34	1	181	181	Method of Disposition	1-4,Δ
20b	-	-	-	-	Place of Disposition	--
20c	-	-	-	-	Location	--
21a	-	-	-	-	Signature	--
21b	35	3	182	184	MT License NumberX	001-999,ΔΔΔ
22	-	-	-	-	Name & Add. of Facility	--
23	36	4	185	188	*Cause of Death Code	0010-9999,ΔΔΔΔ
24a	37	1	189	189	*Autopsy Performed	1-2,9,Δ
24b	38	1	190	190	Were Findings Available	1-2,9,Δ
25	39	1	191	191	Referred to Coroner	1-2,9,Δ

DEATHS - 1993
MAGNETIC RECORD FORMAT
(Continued)

ITEM	FIELD	LENGTH	START	END	NAME	DATA RANGE
26	40	1	192	192	Manner of Death	1-6
27a	41	2	193	194	Month of Injury	mm:01-12,99,ΔΔ
	42	2	195	196	Day of Injury	dd:01-31,99,ΔΔ
	43	2	197	198	Year of Injury	yy:00-93,99,ΔΔ
27b	44	2	199	200	Time of Injury	01-24,99,ΔΔ
27c	45	1	201	201	Injury at Work	1-9,Δ
27d	-	-	-	-	Dec. How Injury Occurred	--
27e	46	1	202	202	Place of Injury	0-9,Δ
27f	47	5	203	207	Location-County & Zip	01-57,59,ΔΔ
28a	48	1	208	208	Certifier-Phys. or Cor.	1-4,Δ
28b	49	2	209	210	Month Signed-Phys or Cor	mm:01-12,99,ΔΔ
	50	2	211	212	Day Signed-Phys or Cor	dd:01-31,99,ΔΔ
	51	2	213	214	Year Signed-Phys or Cor	yy:93,94,99,ΔΔ
28c	52	2	215	216	Hour of Death	01-24,99,ΔΔ
28d	-	-	-	-	Name of Attend. Phys.	--
29a	-	-	-	-	Signed/Title-Coroner	--
29b	-	-	-	-	Date Signed	--
29c	-	-	-	-	Hour of Death	--
29d	53	2	217	218	Month Pron. Dead-Coroner	mm:01-12,99,ΔΔ
	54	2	219	220	Day Pron. Dead-Coroner	dd:01-31,99,ΔΔ
	55	2	221	222	Year Pron. Dead-Coroner	yy:93,-99,ΔΔ
29e	56	2	223	224	Hour Pron. Dead-Coroner	01-24,99,ΔΔ
30	-	-	-	-	Name/Add. of Certifier	--
31a	-	-	-	-	Local Registrar's Sig.	--
31b	57	2	225	226	Month Filed	mm:01-12,99,ΔΔ
	58	2	227	228	Day Filed	dd:01-31,99,ΔΔ
	59	2	229	230	Year Filed	yy:93,94,ΔΔ
-	60	1	231	231	*Alias Field	D,Δ

Δ= BLANK
- = NOT CAPTURED
* = EXTRACTED FOR NCHS
D = IS FOR AN ALIAS: WILL BE IN SECOND RECORD ONLY

STATE OF OCCURRENCE

See Appendix A MONTANA GEOGRAPHIC CODES - 1993 for instruction.

NOTE: This field is coded 00 for voided records. Such records will contain the state file number (item 0b) and the remainder of the record should be blank.

EDIT RANGE: 00-57, 59

ITEM 0b
Death
Montana
1993

STATE FILE NUMBER

This number is sequentially assigned throughout a calendar year. It is stamped on the record as it is received in the Bureau.

EDIT RANGE: 000001-

DECEDENT'S NAME (First) (Middle) (Last)

This item is required by Montana law. It is captured magnetically for the State and NCHS.

NOTE: If middle name is an initial only - key initial and no period. If There is a Suffix, key in Last Name field.

EXAMPLE: Frank T Smith Jr

EDIT RANGE 1ST NAME: 15 Alpha characters, A-Z, hyphens, apostrophes, & spaces
MIDDLE NAME: 15 Alpha characters, A-Z, hyphens, apostrophes, & spaces
LAST NAME: 20 Alpha characters, A-Z, hyphens, apostrophes, & spaces

DECEDENT'S SEX

Montana uses NCHS' Instruction to code this item.

See NCHS - PART 4 for instructions.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 1-2, 9, Δ

DECEDENT'S DATE OF DEATH (Month) (Day) (Year)

This item should appear on the certificate with the month spelled out.

It is keyed to three two-digit fields in MMDDYY format.

If MM or DD are unknown or not classifiable, code 99.

If both found and estimated date of death are listed, refer to NCHS - PART 4 for instructions.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE FOR MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 93

DECEDENT'S RACE

Specify - American Indian, Black, White, etc.

This item is coded to NCHS specifications.

See NCHS - PART 4 for instructions.

1 = White
2 = Black
3 = Indian
4 = Chinese
5 = Japanese
6 = Hawaiian
7 = Filipino
8 = Other Asian or Pacific Islander
0 = Other races
9 = Not Classifiable

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 0-9, Δ

DECEDENT'S AGE (Last birthday)

This item is coded as two a one one-digit fields, and one three-digit field. The first field is used to flag if it is an infant death. The second field is the unit code and the third field is the age of the decedant.

YEARS: Code **FLAG** as blank and code a **AGE** as actual number.

UNDER ONE YEAR: Code **FLAG** as "I" for Infant death and code **UNIT** as 2 (=Months) or 3 (=Weeks) and Code **AGE** as actual number of months or days.

DAYS: Code **FLAG** as "I" if **AGE** is more than 27 days. Code **FLAG** AS "N" if **AGE** is 27 days or less. Code **UNIT** as 4 and **AGE** as actual number.

UNDER ONE DAY: Code **FLAG** as "N" for Neonatal death and code **UNIT** as 5 (=Hours) or 6 (=Minutes) and code **AGE** as actual number of hours or minutes.

Refer to **NCHS - PART 4** for instructions.

NOTE: Unknown age is coded as **UNIT** = 9, and age 99.

EDIT RANGE: IF UNIT IS Δ AGE : 001-135
UNIT IS 2 Months Age : 01-11
UNIT IS 3 Weeks AGE : 01-03
UNIT IS 4 Days AGE : 01-27
UNIT IS 5 Hours AGE : 01-23
UNIT IS 6 Minutes AGE: 00-59

IF FLAG IS I, **UNIT:** 2, 3, OR 4
FLAG IS N, **UNIT:** 4, 5, OR 6

DECEDENT'S DATE OF BIRTH (Month) (Day) (Year)

It is keyed as three two-digit fields in MMDDYY format.

If MM, DD, or YY is unknown, unreadable or not classifiable, code 99.

If MM, DD, or YY is blank, code two blanks.

See NCHS - PART 4 for instructions.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE FOR MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 00-99, ΔΔ

COUNTY OF DEATH

This item constitutes the county of occurrence. This item is coded to a two-digit field and is never unknown or not classifiable.

See Appendix A MONTANA GEOGRAPHIC CODES - 1993 for additional information.

NOTE: Ignore leading '0' on Appendix A for this item.

NOTE: If the item is blank, it should be left blank and then queried.

EDIT RANGE: 01-57

PLACE OF DEATH (Check only one)

This item is coded to a one-digit field.

Hospital: 1 = Inpatient
2 = ER/Outpatient
3 = DOA

Other: 4 = Nursing Home
5 = Residence
6 = Other

EDIT RANGE: 1-6

FACILITY NAME (If no institution, give street and number)

This item is coded to a three-digit field.

See Appendix C MONTANA CODES - 1993 for listing of Montana Hospitals and Appendix E for listing of Montana Nursing Homes.

This item may be blank if the Facility is a "Residence", or "Other" such as a Highway location or locations other than a hospital or nursing home.

EDIT RANGE FOR RESIDENCE : ΔΔΔ
EDIT RANGE FOR HOSPITAL : 011-562
EDIT RANGE FOR NURSING HOMES: 801-930

CITY, TOWN, OR LOCATION OF DEATH

This item is required by Montana law. This item is not coded or captured magnetically.

EDIT RANGE: N/A

BIRTHPLACE (City) (State) (Foreign Country)

This item is coded to a two-digit field using the codes for states and countries found in VSIM - GEOGRAPHIC CODES.

These same codes are in Appendix A MONTANA GEOGRAPHIC CODES - 1993, States and Countries. Montana captures the State of birth.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE: 01-57, 59, 99, ΔΔ

MARTIAL STATUS

Montana Codes:

1 = Single, never married
2 = Married or separated
3 = Widowed
4 = Divorced
9 = Unknown, not classifiable

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE: 1-4, 9, Δ

SURVIVING SPOUSE (If wife, give maiden surname)

This item is required by Montana law, but is not captured magnetically.

EDIT RANGE: N/A

SOCIAL SECURITY NUMBER

This item is keyed to a nine-digit field. If less than nine or partial number, skip the field. If more than nine digits enter the first nine digits. If the item is blank, it should remain blank.

If more than on Social Security number is reported, enter the first number in the original record. Key a separate record for each additional SSN and enter the alias indicator in each record after the first.

NOTE: ΔΔΔΔΔΔΔΔΔ = Blank
ΔΔΔΔΔΔΔΔΔ = Less than 9

EDIT RANGE: 000000001 - 999999999, ΔΔΔΔΔΔΔΔΔ

DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired.)

This item is required by Montana law, but is not captured magnetically.

EDIT RANGE: N/A

KIND OF BUSINESS/INDUSTRY

This item is required by Montana law, but is not captured magnetically.

EDIT RANGE: N/A

WAS DECEDENT EVER IN U.S. ARMED FORCES

This item is required by Montana law, but is not captured magnetically.

EDIT RANGE: N/A

RESIDENCE - STATE

See NCHS VSIM GEOGRAPHIC CODES - 1982 or Appendix A MONTANA GEOGRAPHIC CODES - 1993.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE: 01-57, 59, 99, ΔΔ

COUNTY

This item is coded to a three-digit field.

If the State of Residence (item 14a) is Montana (27) then this item is coded as a Montana county from Appendix B, MONTANA GEOGRAPHIC CODES - 1993. Positions 1 and 2 are for the county, and position 3 is for the city or town. Blank if city or town are not in Appendix B.

If the State of Residence (item 14a) is Canada (55) then this item is coded as Canadian Provinces for Appendix A, CANADIAN PROVINCES - 1993.

If State of Residence (item 14a) is 01-26 or 28-51, then this item is coded according to NCHS VSIM GEOGRAPHIC CODES - 1982.

If State of Residence (item 14a):
52 = Puerto Rico
53 = Virgin Islands
54 = Guam
56 = Cuba
57 = Mexico
59 = Remainder of World

then this item is blank.

EDIT RANGE: 01Δ - 999, ΔΔΔ

CITY, TOWN, OR LOCATION

This item is required by Montana law. It is not coded or captured magnetically. For further information see item 14e of this instruction manual.

EDIT RANGE: N/A

ITEM 14d
Death
Montana
1993

STREET NUMBER

This item is required by Montana law, but is not captured magnetically.

EDIT RANGE: N/A

INSIDE CITY LIMITS (Yes or No)

This item is coded to a one-digit field.

1 = YES
2 = NO
9 = Unknown

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 1-2,9, Δ

ITEM 14f
Death
Montana
1993

ZIP CODE

This item is keyed to a five-digit field. If the item is blank and item 14c is a Montana city, it is coded to that city. If it is blank and is an out of state city, the item is left blank.

EDIT RANGE: 00001-99999, ΔΔΔΔΔ

ANCESTRY

This item is coded to a two-digit field in the hope of utilizing it for Montana's specific need in the future.

This item replaces the Hispanic Origin question on the U.S. Standard, but we are committed to coding this item in such a way as to accommodate NCHS' requests in this area.

00 = Non-Hispanic
01 = Mexican
02 = Puerto Rican
03 = Cuban
04 = Central or South American
05 = Other Hispanic and unknown Hispanic
99 = Unknown or not classifiable

See **NCHS - PART 4** for additional instruction.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 00-05, 99, ΔΔ

EDUCATION (Specify Only Highest Grade Completed)

Elementary/Secondary (0-12)
College (1-4 or 5+)

This item is coded to a two-digit field. The coder must analyze responses to this item and convert them to a number corresponding to "years of formal education."

Montana uses NCHS' conventions and instructions in the coding of this item.

See **NCHS - PART 4** for instructions.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE: 00-17, 99, ΔΔ

FATHER'S NAME (First) (Middle) (Last)

This item is required by Montana law. The **Last Name** is captured for Montana use and for NDI.

NOTE: Montana keys Father's Last Name including the generations JR, SR, etc. This item is required for reference check against the decedent.

NOTE: If any part of the name is missing, leave that portion blank.

EDIT RANGE 1ST & MIDDLE NAME: 15 Alpha characters, hyphens, apostrophes
LAST NAME: 20 Alpha characters, hyphens, apostrophes

MOTHER'S NAME (First) (Middle) (Maiden Surname)

This item is required by Montana law. It is also used for the interstate exchange agreement.

NOTE: If any part of the name is missing, leave that portion blank.

EDIT RANGE 1ST & MIDDLE NAME: 15 Alpha characters, hyphens, apostrophes
LAST NAME: 20 Alpha characters, hyphens, apostrophes

INFORMANT'S NAME

MAILING ADDRESS (Street and Number of Rural Route Number, City or Town, State, Zip Code)

These items are required by Montana law. They are not coded or captured magnetically.

EDIT RANGE: N/A

METHOD OF DISPOSITION

This item is coded to a one-digit field. This item is captured for Montana use.

1 = Burial
2 = Cremation
3 = Removed from State
4 = Other

EDIT RANGE: 1-4, Δ

PLACE OF DISPOSITION (Name of cemetery, crematory, or other place)

LOCATION (City) (Town) (State)

SIGNATURE OF FUNERAL SERVICE LICENSEE OR OTHER PERSON IN CHARGE OF DISPOSITION

These items are required by Montana law. They are not coded or captured magnetically.

EDIT RANGE: N/A

MONTANA LICENSE NUMBER (of Licensee)

This item is a three-digit field. This item is captured for Montana use.

EDIT RANGE: ΔΔΔ, 001-999

NAME AND ADDRESS OF FACILITY

This item is required by Montana law. It is not coded or captured magnetically.

EDIT RANGE: N/A

CAUSE OF DEATH

These items are coded by the nosologist at the state level. This is a four-digit field.

NOTE: The fourth digit in the code 999x is blank.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9999.

EDIT RANGE: 0010 - 999Δ, ΔΔΔΔ

WAS AN AUTOPSY PERFORMED (Yes or No)

WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETIONS OF CAUSE OF DEATH (Yes or No)

Each item is coded to a one-digit field.

1 = Yes
2 = No
9 = Not Classifiable

See NCHS - PART 4 for additional information.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 1, 2, 9, Δ

WAS CASE REFERRED TO CORONER (Yes or No)

This item is coded to a one-digit field.

1 = Yes
2 = No
9 = Not Classified

See **NCHS - PART 4** for additional information.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 1, 2, 9, Δ

MANNER OF DEATH

1 = Natural
2 = Accident
3 = Suicide
4 = Pending Investigation
5 = Could Not Be Determined
6 = Homicide

NOTE: If manner of death = 1, then the 4 digits of the death code would be: 0010-799Δ.

If manner of death = 2, then the 4 digits of the death code would be: 8000-9499.

If manner of death = 3, then the 4 digits of the death code would be: 9500-959Δ.

If manner of death = 4, then the 4 digits of the death code could be: ΔΔΔΔ-999Δ.

If manner of death = 5, then the 4 digits of the death code would be: 9800-989Δ.

If manner of death = 6, then the 4 digits of the death code would be: 9600-978Δ.

EDIT RANGE: 1-6

DATE OF INJURY (Month) (Day) (Year)

This item is coded to three two-digit fields in MMDDYY format.

NOTE: If the Cause of Death was not due to external injury, items 27a - 27f would be blank. If the Cause of Death was due to an external injury and items 27a - 27f are blank, it should be left blank and then queried. If the query is unsuccessful code 99.

If date of injury in unknown, this item is coded and keyed as 999999.

EDIT RANGE MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 00-93, 99, ΔΔ

TIME OF INJURY

This item is coded to military time, in hours with minutes truncated.

EDIT RANGE: 01-24, 99, ΔΔ

ITEM 27c
Death
Montana
1993

INJURY AT WORK (Yes or No)

If yes:
1 = Agriculture
2 = Mining, Quarrying, Oil and Gas Wells
3 = Construction
4 = Manufacturing
5 = Transportation and Public Utilities
6 = Trade
7 = Service
8 = Government
9 = Other Specified industries

See National Safety Council Bulletin T-072-78, Item 11-19 for explanation of all codes.

EDIT RANGE: 1-9, Δ

DESCRIBE HOW INJURY OCCURRED

This item is required by Montana law. This item is not coded or captured magnetically.

EDIT RANGE: N/A

PLACE OF INJURY - Home, farm, street, factory, office building, etc. (Specify)

0 = Home
1 = Farm
2 = Mine
3 = Industrial
4 = Recreational
5 = Street-Highway
6 = Public Building
7 = Institution
8 = Other Specified
9 = Unknown

If this item has no entry, but place of injury is given elsewhere on the certificate, code to specified place.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 9.

EDIT RANGE: 0-9, Δ

LOCATION (Street and Number or Rural Route Number, City or Town, State)

The first field is coded to the county of occurrence of injury. The second is the last three digits of the zip code for eth location of injury/death. This item is made up of a two-digit field and a three digit field.

This item may show a different location than place of death.

If injury/death occurred out-of-state, code 59.

See Appendix A, MONTANA GEOGRAPHIC CODES - 1993.

NOTE: If the item is blank, it should be left blank and then queried. If the query is unsuccessful code 99.

EDIT RANGE COUNTY: 01-57, 59, ΔΔ
ZIP CODE: 000-999, ΔΔΔ

TO BE COMPLETED BY CERTIFYING PHYSICIAN ONLY. To the best of my knowledge, death occurred at the time, date, and place due to the cause(s) stated. (Signature and Title).

CERTIFIER TYPE: Code to a one-digit field.

1 = Physician
2 = Coroner, Deputy Coroner, Justice of the Peace
3 = Other
4 = Unknown, not classifiable

NOTE: If this item is filled out, then items 28b and 28c will be captured and items 29a - 29e will be blank.

EDIT RANGE: 1-4, Δ

DATE SIGNED (Month) (Day) (Year)

This item is keyed to three two-digit fields in MMDDYY format.

If items 29a - 29e are captured instead of items 28 - 28c, this item will be blank.

NOTE: If this item and items 29a - 29e are blank, this item should be left blank and then queried.

EDIT RANGE MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 93, 94, 99,ΔΔ

HOUR OF DEATH

Code to a two-digit field by military time

If items 29a - 29e are captured, then this item will be blank.

NOTE: If this item and items 29a - 29e are blank, this item should be left blank and then queried. If query is unknown or unsuccessful, code 99.

EDIT RANGE: 00-24, 99, ΔΔ

NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER

This item is required by Montana law. This is not coded or captured magnetically.

EDIT RANGE: N/A

TO BE COMPLETED BY CORONER ONLY. On the basis of the examination and/or investigation, in my opinion, death occurred at the time, date and place and due to the cause(s) and manner stated.

This item is to be coded and captured if item 28a is not completed. This should be coded to the Coroner code "2" as it is on item 28a for listing of codes.

NOTE: If the item is blank, it should be left blank and then queried.

EDIT RANGE: 1-4, Δ

DATE SIGNED (Month) (Day) (Year)

This item is keyed to three two-digit fields in MMDDYY format.

If items 28a - 28c are captured instead of items 29a - 29e, this item will be blank.

NOTE: If this item and items 28a - 28c are blank, this item should be left blank and then queried.

EDIT RANGE MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 93, 94, 99, ΔΔ

HOUR OF DEATH

Code to a two-digit field by military time.

If items 28a - 28c are captured, then this item will be blank.

NOTE: If this item and item 28c are blank, this item should be left blank and then queried. If query is unknown or unsuccessful, code 99.

EDIT RANGE: 00-24, 99, ΔΔ

DATE PRONOUNCED DEAD (Month) (Day) (Year)

This item is keyed to three two-digit fields, in MMDDYY format.

If MM, DD, or YY is stated as unknown or is not classifiable, code 99.

If MM, DD, or YY is blank, then code blanks.

NOTE: This item is completed only if the Coroner has completed items 29a - 29c. If the Certifier was a physician then this item will always be blank.

EDIT RANGE MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 93, 94, 99, ΔΔ

PRONOUNCED DEAD (Hour)

This item is coded to military time.

This item will always be blank if items 28a - 28c are completed.

NOTE: If this item and items 28a - 28c are blank, this item should be left blank and then queried. If query is unknown or unsuccessful, code 99.

EDIT RANGE: 01-24, 99, ΔΔ

NAME AND ADDRESS OF CERTIFIER (Physician) (Coroner)

This item is required by Montana law. This item is not coded or captured magnetically.

EDIT RANGE: N/A

LOCAL REGISTRAR'S SIGNATURE

This item is required by Montana law. It is not coded or captured magnetically.

EDIT RANGE: N/A

ITEM 31b
Death
Montana
1993

DATE FILED (Month) (Day) (Year)

This item is keyed to three two-digit fields in MMDDYY format.

If MM or DD is stated as unknown or is not classifiable, code 99.

NOTE: If the item is blank, it should be left blank and then queried. The correct date will be keyed when the query is returned. This item must be complete.

EDIT RANGE MM: 01-12, 99, ΔΔ
DD: 01-31, 99, ΔΔ
YY: 93, 94, ΔΔ